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or that a big black stone in the forest must be very old (as it probably was!). The seeing of pictures of people or animals in cracks on the wall surely reveals no fetichism in children even though fantasy may, in part, have been responsible for this animistic view of the world. The section upon child magic is particularly weak. To give only one or two instances of the ease with which savage characteristics are attributed to the child upon the most slender basis of fact, "A boy of five emptied his pockets for me. In them were a pill-box with imaginary salve to cure your finger when it got hurt and some pretty stones." And this is mentioned as an instance of primitive shamanism in the modern child! In no case is there any apparent recognition of the possibility of explaining an oddity of child belief or fancy through imitation or suggestion, or through a possible peculiarity of his environment. In no case is it recognized that the reported belief may merely accidentally savor an animism, owing to a defect, for instance, in the child's language, or in his lack of abstract terms in which to tell what he thought. The whole article is a veritable jumble in which the play and make-believe of children and their half-developed ideas, reported in many cases by girls in their teens, are mixed with the superstitions of adults to lead us to the conclusion that the child is quite prone to fetichism, e. g., the fact that a distinguished lawyer has for years carried a lucky penny is turned in as evidence.

Most of the articles contain brief discussions of supposed anthropological parallels to the phenomena discussed but the material presented is too fragmentary to have any significance even if the interpretation of it were less superficial.

Aside from the particular theory underlying most of the articles, the reports themselves are of course of peculiar interest to all parents and teachers, and they certainly tend to bring us into closer touch with child life. Of particular value is the "Story of a Sand Pile," and "Boy Life Forty Years Ago."

Our Children. By PAUL CARUS. Chicago: The Open Court Publishing Co., 1906. Pp. 207.

This is a delightful volume of essays upon child training; the discussions are informal and simple, practical rather than theoretic, and appreciative rather than coldly scientific. Such topics as the use of money, fairness, sympathy with animals, moral discipline, sanitary suggestions, suggestions toward the first steps in teaching mathematical ideas, science, foreign languages, music, are included in the book. It is particularly suggestive of ways the parent can use daily happenings as means of broadening the child's circle of ideas and strengthening his character. No one can read the little volume without a renewal of zeal to live more truly for his children.

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High School Algebra, Elementary Course. By H. E. SLAUGHT, PH.D., assistant professor of mathematics in the University of Chicago, and N. J. LENNES, M.S., instructor in mathematics in the Wendell Phillips High School, Chicago. Boston: Allyn and Bacon, 1907. Pp. 297.

For some time a revision of the school course in algebra has been an admitted necessity. Many recent studies and discussions have dealt with the

essential features of a course adapted to present needs. In this question the authors of the book have been actively interested for several years and are thoroughly familiar with its literature. In the light of, and in conformity with, the exacting requirements of mathematical pedagogy as recently developed in this country and abroad, they propose a course in algebra suited to existing conditions in our high schools and academies. That the needs of beginners may receive adequate consideration the text is divided into two parts: an elementary course "designed solely for the first year," and an advanced course for subsequent and maturer study. Only the elementary course has appeared. It carries the student through quadratic equations. It aims to give him practical mastery of some important processes of elementary algebra so that he can *use* them:—in geometry, in mechanics, in physics, in chemistry, or any other of their simpler applications. At the same time, while subordinating theory, it is designed to familiarize him with certain ideas essential to a fuller development of the subject. The treatment is fresh and invigorating. The book is an excellent example of how interesting and attractive a subject often considered dry may become when developed in connection with its more important applications. It is the evident result of much conscientious work. It evinces keen insight into the mental process of the beginner. For skilful and sustained appeal to his interest and attention it is without parallel in the recent textbook literature of the subject. It is destined to receive an enthusiastic reception from teachers of mathematics and to inaugurate, let us hope, a new era in the teaching of elementary algebra.

In the brief space at command only a few features may be touched on. For a full and careful statement of the principles which have guided the authors, the reader is referred to the preface of the book.

Algebra as here treated has its foundations in arithmetic. The development is wholly from the numerical and concrete side. To an extent quite unusual the illustrative examples in the text form the heart of the discussion. The connection with arithmetic has thus been made so close, the transition from it so gradual, that to the learner no line of demarkation should appear. In this transition from arithmetic the authors have applied with skill and judgment a principle which might well receive fuller recognition in first courses in other branches of mathematics.

The equation (on the practical side rather than the theoretical) is the central topic. It appears in the first, and, in fact, in every succeeding chapter. Factoring, fractions, radicals, are studied so far as they contribute to the main purpose in hand, the solution of equations. An entire chapter is devoted to the graph. It receives many and suggestive applications. It forms the basis for the study of simultaneous equations and illumines the entire discussion in a way that should be particularly helpful and attractive to the beginner. This grouping of the topics with reference to the equation has many and obvious advantages in a first course. Not the least of these is the ease with which algebra is kept in touch with its applications.

This treatment of the equation is supported by a collection of carefully graded problems which for practical character, interest, and range is altogether unique in elementary texts. Something of its richness may be inferred from the subheadings of a single list of problems in chap. iv: problems involving interest;

problems involving areas; problems involving volumes; problems involving simple number relations; problems involving motion; problems involving the simple lever; problems involving densities; problems on momentum; problems on thermometer readings. Were there no other distinguishing features, the problems alone would justify the appearance of the book. They amply confirm the authors' statement that "the main purpose of the elementary course is the solution of problems rather than the construction of a purely theoretical doctrine as an end in itself."

Characteristic of the treatment is the enunciation in eighteen short statements of the principles of algebra used in the elementary course. "Each of these is obtained by induction from simple, concrete examples. These principles are not designed to form a body of fundamental assumptions from which a deductive system may be obtained, but are intended to furnish a codification of the learner's information on algebra in a form immediately adapted for use. The emphasis is not on the theoretical but on the practical side." In deference to the immaturity of the pupil these principles receive no formal demonstration. Logically considered they give character and consistency to the entire treatment and lead inevitably to a treatment, at some later period, based on the three so-called fundamental laws, such, for instance, as is given in Chrystal's textbook. Thus the authors have so wrought that while the student may have much more to learn than is given in this book, yet for the purposes of later study he shall have a minimum to unlearn.

In its gain of simplicity by keeping essentials constantly in the fore, in its appeal to the learner by emphasis on important applications and on graphical methods, in its solicitude that he be not forced prematurely into purely abstract, symbolic reasoning, the book embodies the best results of recent studies on the teaching of algebra. It will arouse enthusiasm in the classroom and merits a wide adoption. On textbook and teaching methods it will exert, we believe, a profound influence.

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Principles of Intellectual Education. By F. H. MATTHEWS. Cambridge: The University Press; New York: G. P. Putnam's Sons.

There is a characteristic difference between English and American books on education. With but few exceptions, English writers treat the subject in a systematic, logical manner. They seek to establish their principles mainly by making them appear to be reasonable. They do not employ to any great extent experimental data or the views of other writers. The present reviewer generally feels when he is reading an English book on education that he is following a close line of reasoning, rather than surveying a body of facts derived from observation or experiment. On the other hand, American books, taken as a whole, are not systematic or logical. The method of treatment is not so much one of sound argument from general propositions, as the presentation of concrete material derived from biology, psychology, ethics, and related sciences, and the interpretation of these facts for a science and art of education. Some of the most useful of American books would be regarded by an Englishman as chaotic, for the different parts do not hang together nicely and logically.